INCH-POUND

MS24142N
15 April 2003
SUPERSEDING
MS24142M
30 August 1993

DETAIL SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 200 AMPERES, 1 PST (N.O.), TYPE I, HERMETICALLY SEALED

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the relay described herein shall consist of this specification and the latest issue of MIL-PRF-6106.

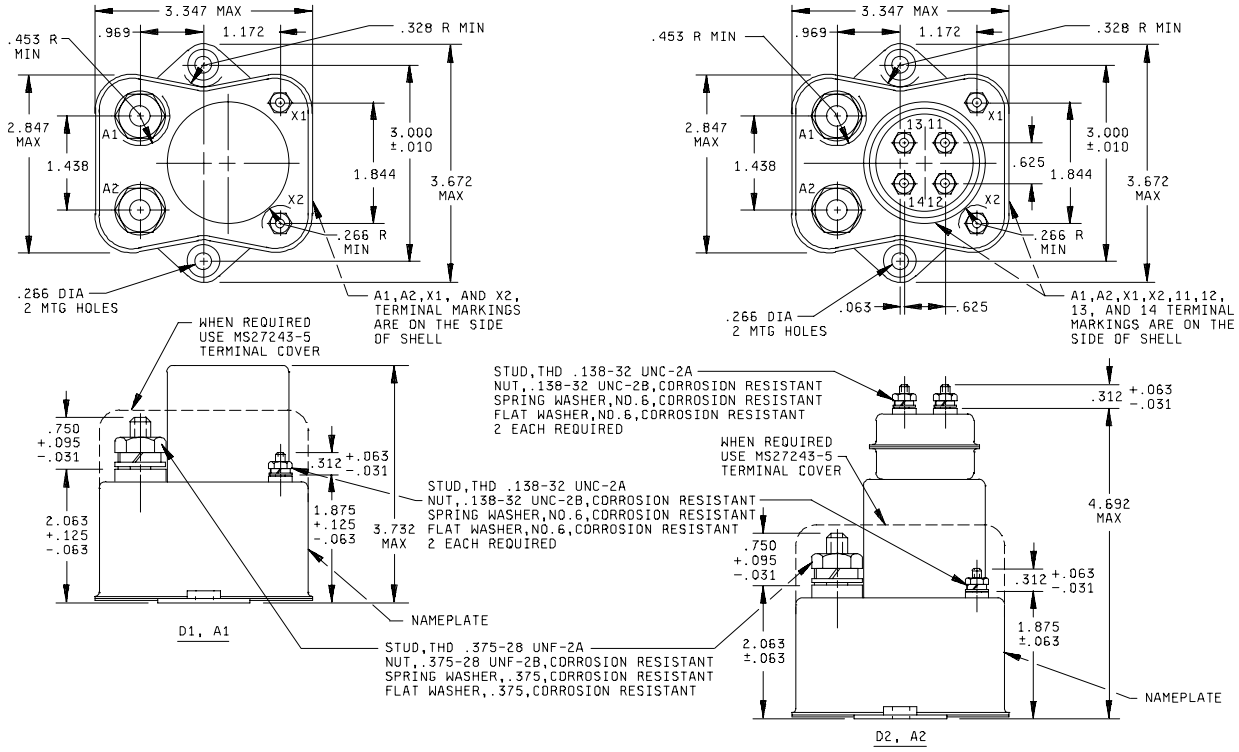
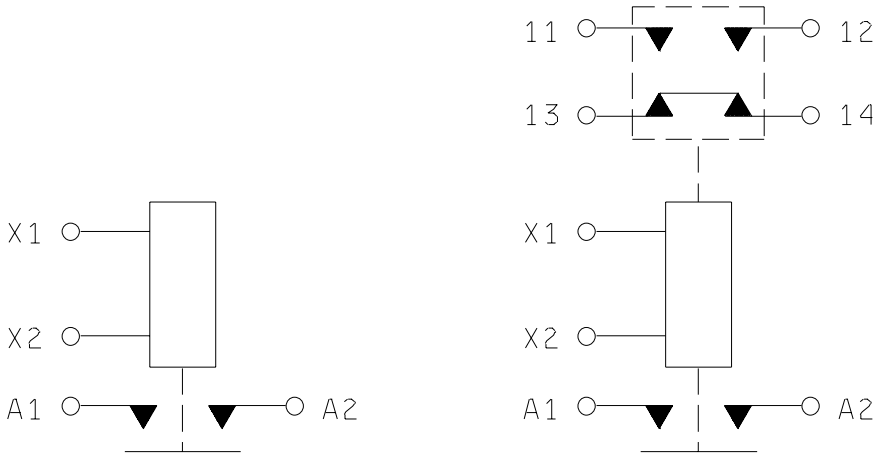


FIGURE 1. Dimensions and configurations.



Inches	mm	Inches	mm	Inches	mm
.010	0.25	.328	8.33	1.844	46.84
.031	0.79	.375	9.53	1.875	47.63
.063	1.60	.453	11.51	2.063	52.40
.095	2.41	.625	15.88	2.847	72.31
.138	3.51	.750	19.05	3.000	76.20
.240	6.10	.688	17.48	3.347	85.01
.250	6.35	.969	24.61	3.672	93.27
.266	6.76	1.172	29.77	3.732	94.79
.312	7.92	1.438	36.53	4.692	119.18

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.031.
4. This specification sheet takes precedence over documents referenced herein.
5. Referenced Government documents of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation form a part of this specification to the extent specified herein.
6. Coil and auxiliary terminals may use additional flat washer for terminal seat.
7. Cadmium or cadmium compounds are prohibited on external hardware. A transition period to non-cadmium hardware is authorized for up to 1 year from the date of this revision.
8. Spring washer on drawing is a spring lock washer.

FIGURE 1. Dimensions and configurations - Continued.

REQUIREMENTS:

Dimensions and configurations: See figure 1.

Environmental characteristics:

Temperature range 1/: -70° to +125°C.

Maximum altitude rating: 80,000 ft.

Shock G-level: 25 g's.

Duration: 6-9 ms.

Max duration contact opening: 2 ms.

Vibration - sinusoidal: See table I.

Vibration - random: Not applicable.

High shock: Not applicable.

Acceleration: 15 g's.

Electrical characteristics (see tables II, III, and IV):

Insulation resistance, initial: 100 megohms.

After life or environmental tests: 50 megohms.

Dielectric strength (sea level): 2-5 seconds.

	Initial		After life tests	
	28 V dc	115 V ac	28 V dc	115 V ac
Coil to case	1,250 V rms	1,500	1,000 V rms	1,125
Aux contacts	1,250 V rms	1,500	1,000 V rms	1,125
All other points	1,250 V rms	1,500	1,000 V rms	1,125

Dielectric strength (altitude): 1 minute.

	28 V dc	115 V ac
Coil to case	500 V rms	500
Aux contacts	500 V rms	500
All other points	500 V rms	500

Max contact drop initial: .150 volt.

After life test: .175 volt.

Overload current (NO): 1,600 amperes.

Rupture current (NO): 2,000 amperes.

Duty rating: Continuous.

RFI specification: MIL-STD-461.
(Applicable to coil circuits of ac operated relays).

TABLE I. Vibration levels.

Dash number	5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz	500-1,500 Hz
D1	.08 DA	.06 DA	10 g's	5 g's	4 g's
D2				3 g's	3 g's

TABLE II. Operating characteristics.

PIN MS 24141-	Coil data											Time - milliseconds max 2/					
	Coil	Rated			Max		Max pick-up voltage			Hold voltage 2/	Drop out voltage 2/	Operate 3/	Release 4/	Bounce 4/			
														Main		Aux	
		Volts 1/	Freq Hz	Ω Res +15% -10	Volts	Amp	Normal 2/	High temp test	Cont current test					NO	NC	NO	NC
D1	X1,X2	28	dc	52	29	0.6	18	21	22.5	7.0	1.5	40	15	2	---	---	---
D2	X1,X2	28	dc	52	29	0.6	18	21	22.5	7.0	1.5	40	15	2	---	4	4

1/ CAUTION: Use of any coil voltage less than rated coil voltage will compromise the operation of the relay.
2/ Over the temperature range.
3/ With rated coil voltage.
4/ From rated coil voltage.

TABLE III. Rated contact load (amperes per pole) case grounded.

Type of load	Life operating cycles x 10^3	28 V dc				115 V ac, 1 phase				115/200 V ac, 3 phase 1/			
		Main		Aux		Main		Aux		Main		Aux	
		NO	NC	NO	NC	400 Hz	60 Hz	400 Hz	60 Hz	400 Hz	60 Hz	400 Hz	60 Hz
Resistive	50	200		5	5	200		5					
Inductive	10	100		5	5								
Motor	50	100				150							
Lamp 2/	50			.75	.75			.75					
Transfer load 3/													
Mechanical life reduced current	100	50		1.25	1.25	50		1.25					
Mixed loads	50	20	Applicable per spec			20							

1/ Absence of value indicates relay is not rated for 3-phase application.
2/ The total "On" time shall be 2 seconds ±0.05 second and the "Off" time shall be 7 seconds ±2.0 seconds for a simulated lamp load.
3/ Transfer load indicates relay is suitable for transfer between unsynchronized ac power supplies at rating indicated.

Part or Identifying Number (PIN): MS24142 (plus dash number from table IV).

General characteristics: See table IV.

TABLE IV. Dash numbers and general characteristics. 1/

Part number MS24141-	Type	Coil type	Terminal type	Mounting or mating socket	Auxiliary contacts	Maximum weight in pounds 2/
D1	I	dc	Stud	Flange	None	2.3
D2		dc			Yes	2.5

1/ A1 and A2 have been canceled without replacement.
2/ Weights include covers and barriers.

If the relays produced for MS24142 are similar in construction and design except for the power rating to the relays produced for MS24140 and MS24141, then reduced testing for qualification of MS24142 relays may be performed concurrent with or subsequent to successful qualification of MS24140 or MS241241.

Qualification by similarity: See MIL-PRF-6106.

Custodians:
NAVY - AS
Air Force - 11
DLA - CC

Review activities:
Air Force - 99
Navy - EC

Preparing activity:
DLA - CC

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